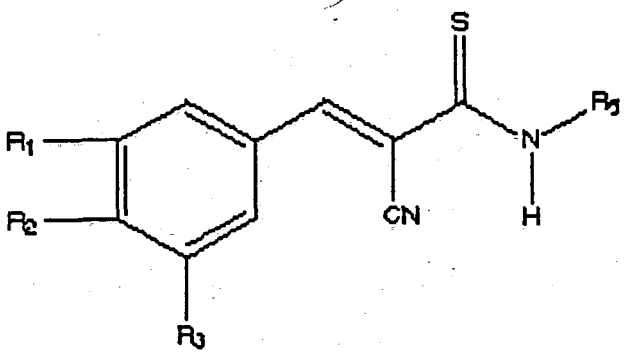
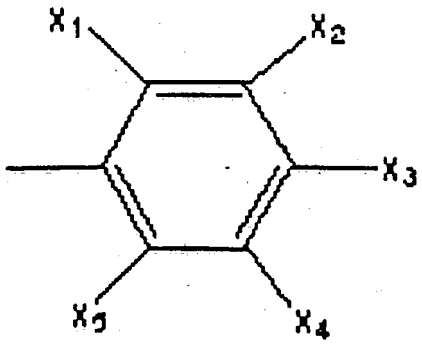
CLAIMS

1. A protein kinase inhibitor composition comprising a compound having the chemical formula:



wherein R_1, R_2, and R_3 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, amine, thioether, SH, halogen, hydrogen, NO_2 and NH_2; and R_5 is an alkylaryl comprising an

alkyl group and an aryl group having the following structure:



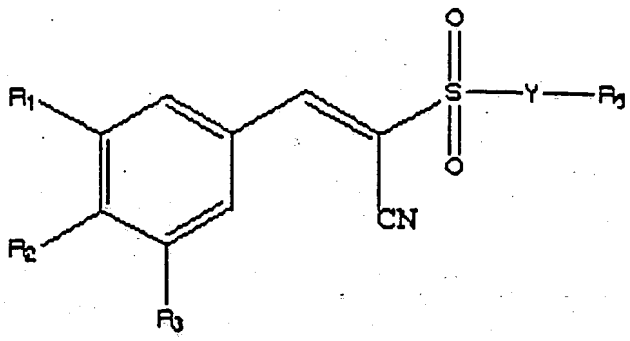
wherein X_1, X_2, X_3, X_4, and X_5 is each independently selected from the group consisting of hydrogen, halogen, alkyl, trihalomethyl, and NO_2.

2. The composition of claim 1, wherein said R_1 and said R_2 is OH, and said R_3 is hydrogen, and said compound significantly inhibits HER-2 activity.

3. The composition of claim 2, further comprising a physiologically acceptable carrier.

4. The composition of claim 1, wherein said compound is M13.

5. A HER-2 protein kinase inhibitor composition comprising a compound having the chemical formula:



wherein R_1, R_2, and R_3 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, amine, thioether, SH, halogen, hydrogen, NO_2 and NH_2;

Y is either nothing, -C(CN)=C-, -alkyl- or -NH-alkyl-; and

R_5 is either CN or aryl.

6. The composition of claim 7, wherein said aryl phenyl or pyridyl.

7. The composition of claim 6, wherein said aryl contains 1 to 5 substitutents independently selected from the group consisting of: alkyl and OH; and the remaining substituents are hydrogen.

8. The composition of claim 9, wherein said alkyl is either methyl, *t*-butyl or isopropyl.

9. The composition of claim 9, wherein 1-3 of said substituents is selected from the group consisting of OH, methyl, *t*-butyl or isopropyl.

10. The composition of claim 5, wherein said R_1 is *t*-butyl or isopropyl;

said R_2 is OH;

said R_3 is *t*-butyl or isopropyl;

said Y is either CH_2, or C(CN)=C; and

said R_5 is either CN, phenyl or pyridyl.

11. The composition of claim 5, wherein said R_1 is *t*-butyl or isopropyl;

said R_2 is OH;

said R_3 is *t*-butyl or isopropyl;

said Y is either nothing or a lower alkyl; and

said R_5 aryl is either phenyl or pyridyl.

12. The composition of claim 5, wherein said R_1 is *t*-butyl or isopropyl;

said R_2 is OH;

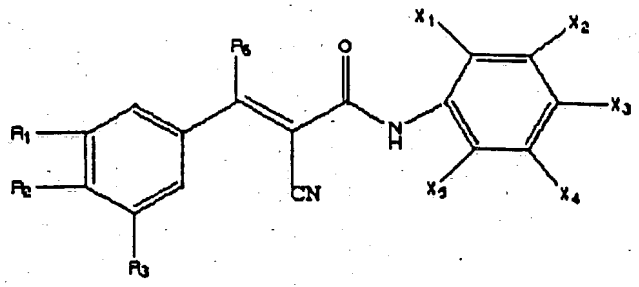
said R_3 is *t*-butyl or isopropyl;

said Y is -NH-lower alkyl-; and

said R_5 aryl is either phenyl or pyridyl.

13. The composition of claim 5, wherein said compound is selected from the group consisting of: M26, M27, M29, M30, M32, M33, M34, M37, M40, M41, M42, M43, M44 and M45.

14. A protein kinase inhibitor composition comprising a compound having the chemical formula:



wherein R_1, R_2, R_3, and R_6 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, halogen, hydrogen, OH, amine, thioether, SH and NH_2; and

X_1, X_2, X_3, X_4, and X_5 are each independently selected from the group consisting of hydrogen, halogen, trihalomethyl, alkyl, alkenyl, alkynyl, alkoxy, and NO_2, provided that at least one of X_1, X_2, X_3, X_4, and X_5 is a trihalomethyl.

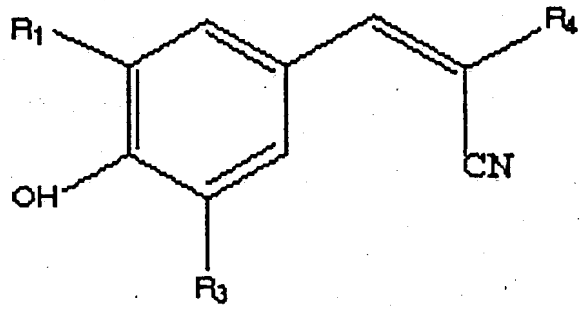
15. The composition of claim 14, wherein said R_1 is OH, said R_2 is OH, said R_3 is hydrogen, R_6 is hydrogen, and four of said X_1, X_2, X_3, X_4, and X_5 is hydrogen.

16. The composition of claim 15, wherein said compound inhibit HER-2 activity.

17. The composition of claim 15, further comprising a physiologically acceptable carrier.

18. The composition of claim 15, wherein said compound is M15.

19. A protein kinase inhibitor composition comprising a compound having the chemical formula:



wherein R_1 and R_3 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl; and

R_4 is selected from the group consisting of alkyl, alkylaryl, thioamide, and amide.

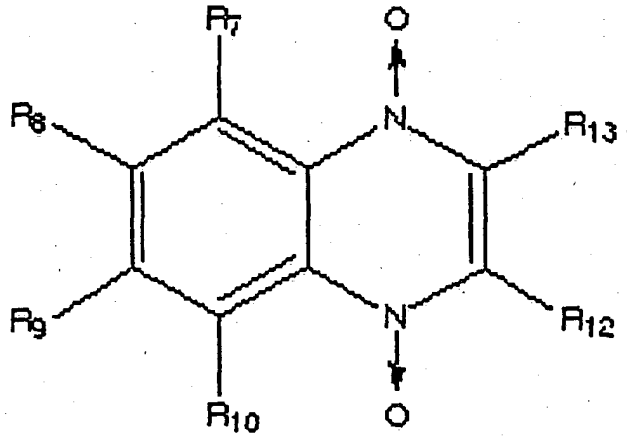
20. The composition of claim 19, wherein R_1 and R_3 is each independently an alkyl.

21. The composition of claim 20, wherein said compound inhibits HER-2 activity.

22. The composition of claim 21, further comprising a physiologically acceptable carrier.

23. The composition of claim 19, wherein said compound is M19, M11, M18, and M17.

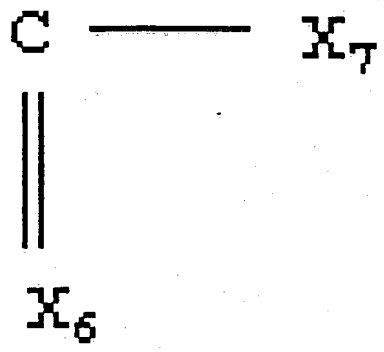
24. A protein kinase inhibitor composition comprising a compound having the chemical formula:



wherein R_7, R_8, R_9, and R_{10}, is each independently selected from the group consisting of alkyl, alkenyl,

alkynyl, alkoxy, alkylaryl, OH, NO_2, amine, thioether, SH, halogen, hydrogen and NH_2;

R_{12} has the chemical structure:



wherein X_6 is either O or S and X_7 is either methyl or trihalomethyl; and

R_{13} is either aryl or alkylaryl.

25. The composition of claim 24, wherein said R_7, R_8, R_9, and R_{10}, are hydrogen; and said R_{13} is aryl.

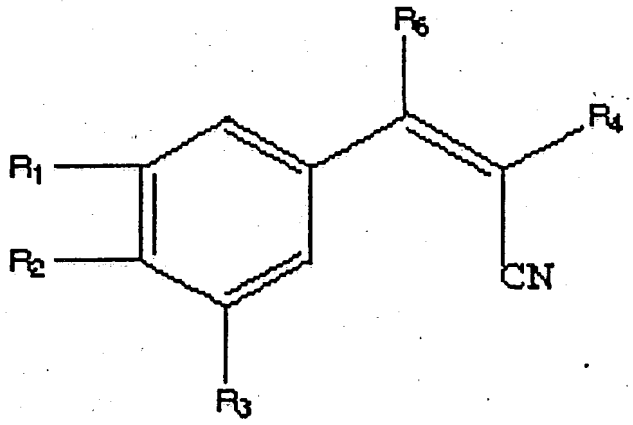
26. The composition of claim 25, wherein said compound inhibits HER-2 activity.

27. The composition of claim 24, further comprising a physiologically acceptable carrier.

28. The composition of claim 24, wherein said compound is either N10 or N12.

29. A protein kinase inhibitor composition comprising a compound selected from the group consisting of: M16, N17, N21, N22, N23, N29, R10, R11, and R12.

30. A method of treating a patient having a cell proliferative disorder comprising the step of administering to said patient a therapeutical effective amount of a compound having the chemical formula:

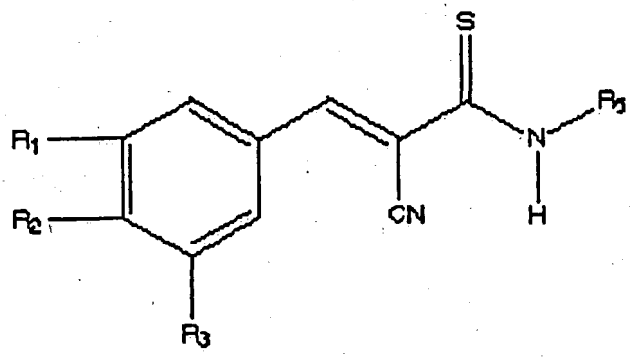


wherein R_1, R_2, R_3, and R_6 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, NO_2, amine, thioether, SH, halogen, hydrogen and NH_2; and

R_4 is selected from the group consisting of alkyl, alkylaryl, thioamide, amide, CN and sulfonyl.

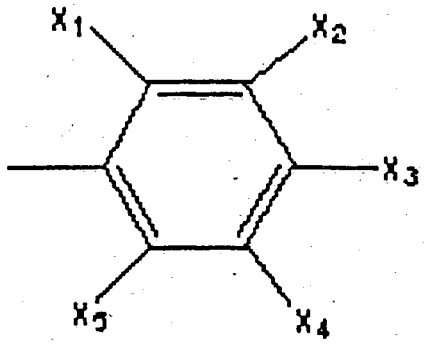
31. The method of claim 30, wherein said disorder is characterized by abnormal or overactivity of HER-2.

32. The method of claim 30 wherein said compound has the chemical formula:



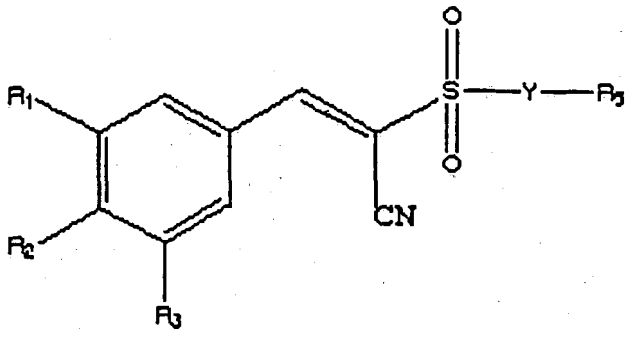
wherein R_1, R_2, and R_3 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, amine, thioether, SH, halogen, hydrogen, NO_2 and NH_2; and

R_5 is an alkylaryl comprising an alkyl group and an aryl group having the following structure:



wherein X_1, X_2, X_3, X_4, and X_5 is each independently selected from the group consisting of hydrogen, halogen, alkyl, trihalomethyl, and NO_2.

33. The method of claim 32, wherein said compound has the chemical formula:

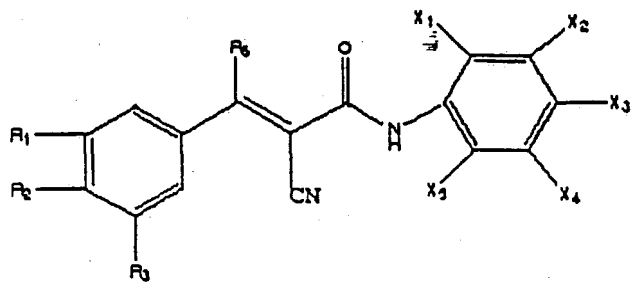


wherein R_1, R_2, and R_3 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, amine, thioether, SH, halogen, hydrogen, NO_2 and NH_2;

Y is either C(CN)=C or alkyl; and

R_5 is either CN or aryl.

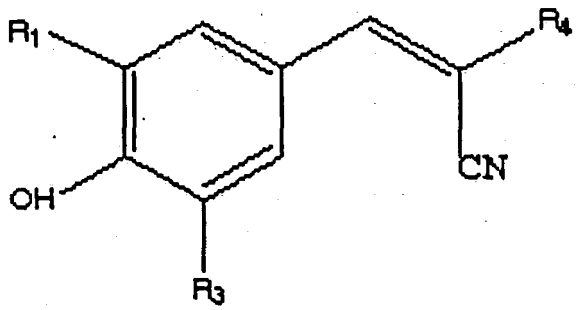
34. The method of claim 30, wherein said compound has the chemical formula:



wherein R_1, R_2, R_3 and R_6 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, halogen, hydrogen, OH, amine, thioether, SH and NH_2; and

X_1, X_2, X_3, X_4, and X_5 are each independently selected from the group consisting of hydrogen, halogen, trihalomethyl, alkyl, alkenyl, alkynyl, alkoxy, and NO_2, provided that at least one of X_1, X_2, X_3, X_4, and X_5 is a trihalomethyl.

35. The method of claim 30, wherein said compound has the chemical formula:



wherein R_1 and R_3 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl; and

R_4 is selected from the group consisting of alkyl, alkylaryl, thioamide, and amide.

36. The method of claim 30, wherein said disorder is characterized by inappropriate activity of EGF-R.

37. The method of claim 31, wherein said cell proliferative disorder is a cancer.

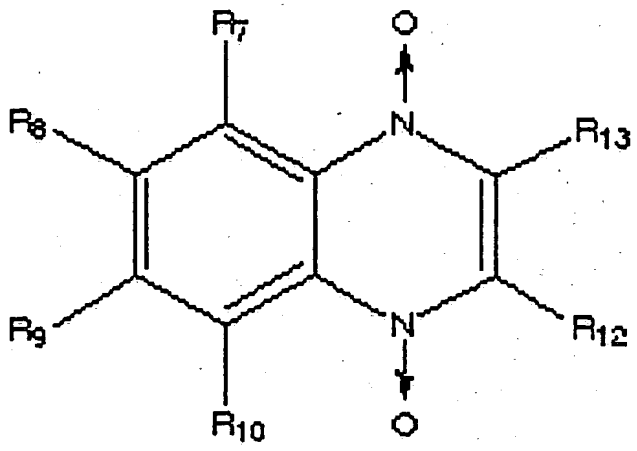
38. The method of claim 37, wherein said cancer is selected from the group consisting of breast carcinomas, stomach adenocarcinomas, salivary gland adenocarcinomas, endometrial cancers, ovarian adenocarcinomas, gastric cancers, colorectal cancers, and glioblastomas.

39. The method of claim 38, wherein said cancer is breast cancer.

40. A method of treating a patient having a cancer characterized by over-activity of HER2 comprising the step of administering to said patient a therapeutical effective

amount of a compound selected from the group consisting of:

a) a compound having the chemical formula:

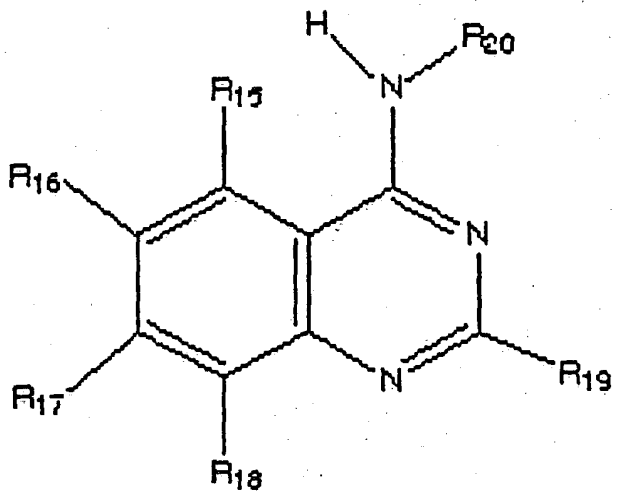


wherein R_7, R_8, R_9, and R_{10}, is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, NO_2, amine, thioether SH, halogen, hydrogen and NH_2;

R_{12} is selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, ester, amide, thioamide, alkylaryl, trihalomethyl, CN, OH, amine, thioether SH, NH_2, and hydrogen; and

R_{13} is selected from the group consisting of aryl, alkyl, alkenyl, alkynyl, CN, alkylaryl, amide, and thioamide;

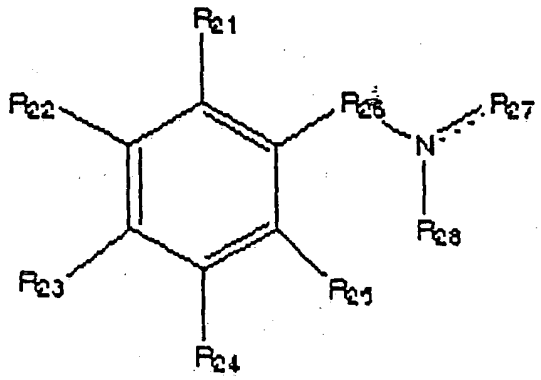
b) a compound having the chemical formula:



wherein R_{15}, R_{16}, R_{17}, R_{18} and R_{19}, is each independently selected from the group consisting of hydrogen alkyl, alkenyl, alkynyl, alkoxy, OH, NO_2, amine, thioether, and SH; and

R_{20} is selected from the group consisting of alkyl, aryl, and alkylaryl;

c) a compound having the chemical formula:



wherein R_{21}, R_{22}, R_{23}, R_{24}, and R_{25}, are each independently selected from the group consisting of hydrogen, halogen, OH, SH, alkyl, aryl, and trihaloalkyl;

R_{26} is either CH_2 or NH;

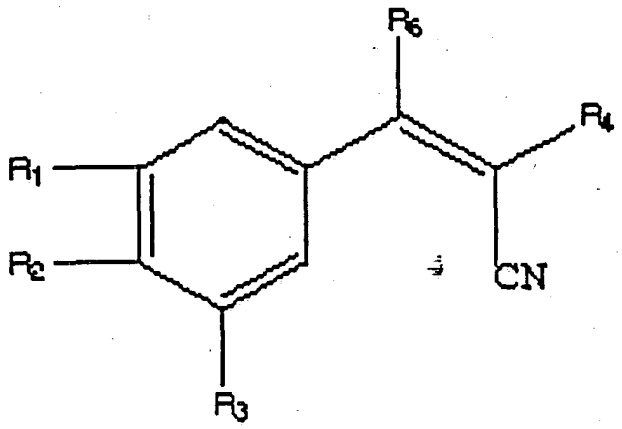
R_{27} is either aryl or $=C(CN)_2$; and

R_{28} is either nothing or H, provided that if R_{28} is nothing a double bond is present between N and R_{27}; and

d) compound R9, R11, R13, and R15.

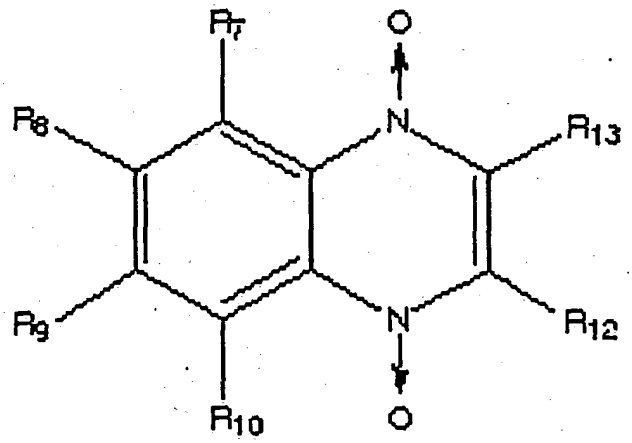
41. A method of treating a patient having a cancer characterized by inappropriate activit of EGFR comprising the step of administering to said patient a therapeutical effective amount of a compound selected from the group consisting of:

a) a compound having the chemical formula:



wherein R_1, R_2, R_3, and R_6 is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, amine, thioether, SH, halogen, hydrogen and NH_2; R_4 is selected from the group consisting of alkyl, alkylaryl, amide, thioamide, and CN;

b) a compound having the chemical formula:

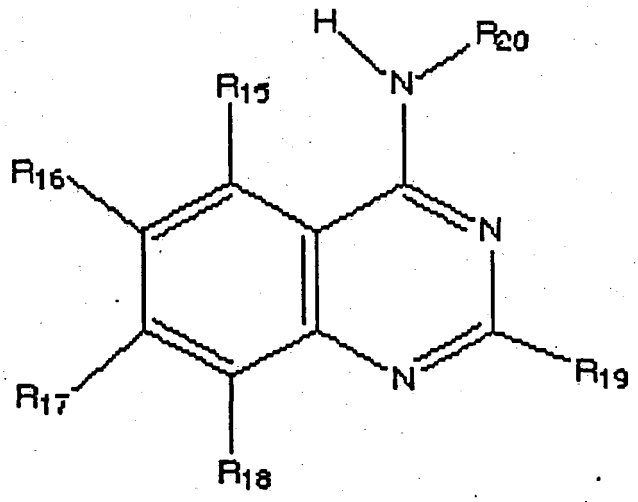


wherein R_7, R_8, R_9, and R_{10} is each independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, OH, amine, thioether, SH, halogen, hydrogen or NH_2;

R_{12} is selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, ester, amide, thioamide, alkylaryl, trihalomethyl, CN, OH, SH, NH_2, hydrogen, amine, and thioether; and

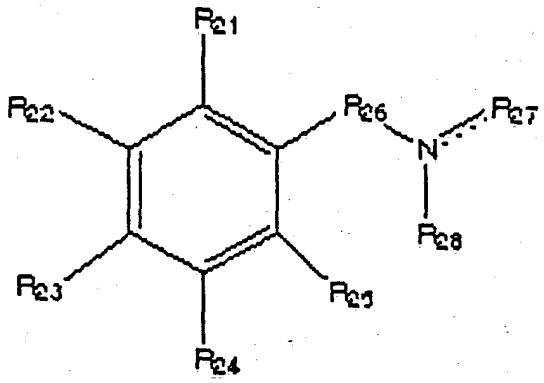
R_{13} is selected from the group consisting of aryl, alkyl, alkenyl, alkynyl, CN, alkylaryl, thioamide, and amide;

c) a compound having the chemical formula:



wherein R_{15}, R_{16}, R_{17}, R_{18} and R_{19}, is each independently selected from the group consisting of hydrogen alkyl, alkenyl, alkynyl, alkoxy, OH, amine, thioether and SH; and R_{20} selected from the group consisting of alkyl, aryl, or alkylaryl; and

d) a compound having the chemical formula:



wherein R_{21}, R_{22}, R_{23}, R_{24}, and R_{25}, are each independently selected from the group consisting of hydrogen, halogen, OH, SH, alkyl, aryl, and trihaloalkyl;

R_{26} is either CH_2 or NH;

R_{27} is either aryl or $=C(CN)_2$;

e) compound R9, R10, R11, R13, R14, and R15.

42. A method of determining whether a receptor tyrosine kinase is important for growth of a cell comprising the steps of:

a) contacting said cell with a composition comprising a compound which significantly inhibits the growth of a receptor tyrosine kinase activity selected from the group consisting of: EGF activity, PDGF activity, and HER2 activity,

b) measuring the growth of said cell after said contacting in said step (a).

43. The method of claim 42, wherein said compound significantly inhibits said activity in a growth assay.